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AN ADDRESS DELIVERED BEFORE SCOPE'S CONFERENCE FOR EDUCATORS ON NARCOTICS AND SMOKING. (TITLE SUPPLIED).

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A SHORT HISTORY OF NARCOTICS USAGE IS PRESENTED. THE TERM DRUG DEPENDENCE IS BEING SUBSTITUTED FOR DRUG ADDICTION AND DRUG HABITUATION. THE ADVANTAGES AND DISADVANTAGES OF VARIOUS ANTIDOTES FOR OPIATES ARE DESCRIBED. THE EFFECTS OF LSD AND MARIJUANA ON PHYSICAL AND MENTAL PROCESSES ARE DESCRIBED. THE USE OF LSD FOR MEDICAL PURPOSES IS DISCUSSED. AN ARGUMENT AGAINST LEGALIZATION OF MARIJUANA SMOKING IS PRESENTED. THIS PAPER WAS DELIVERED BEFORE SCOPES'S CONFERENCE FOR EDUCATORS ON NARCOTICS AND SMOKING (HAUPPAUGE, NEW YORK, MAY 2, 1967). (PS)

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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To trace the beginnings of narcotic drug use and abuse, it would probably be necessary to extend the investigation as far back as the origin of man. Opium, derived from the poppy plant, and its use to relieve pain and induce sleep, was mentioned in the Assyrian Medical Tablets seven centuries B.C. Four hundred years B.C., in the Mesopotamian region, the poppy was referred to as "the plant that produces delight", and Homer mentioned "the intoxicating poppy, the poppy saturated with lethal slumber." At this stage at least, in history, we note the dual emergence of the drug as a euphoriant and as a narcotic agent - for by definition, a narcotic drug is any drug which relieves pain and at the same time produces stupor or sleep.

Paracelsus, in the 16th century, prepared laudanum, composed of gold, pearls and other substances, but containing opium as the chief ingredient (the name is now reserved for the alcoholic tincture of opium).

In the 17th century, the Chinese were introduced to the euphoriant effects of the poppy and opium smoking took hold. Chinese immigrants transported the habit to America, and the United States Government countered by placing high tariffs on opium.

In 1803, Friedrich W. A. Serturner, a pharmacist's assistant, separated morphine from opium and named it Morpheus after the God of dreams.

During the American Civil War, the hypodermic method of introducing drugs was discovered. Surgeons injected morphine freely and many, many patients became addicted.*

In 1898, heroin, a closely related derivative of morphine, was synthesized, and subsequently used, by an incredibly ironical misappraisal of its properties, as a nonaddictive substitute for morphine; indeed, as treatment for morphine addiction.

Toward the end of the first decade of this century, the American government grew alarmed at the steadily increasing rate of opium addiction and prohibited the importation of the drug except for medicinal purposes. By this time, the hypodermic syringe was competing with the pipe as the vehicle for introducing morphine into the body tissues.

More stringent control, however, awaited the Harrison Act of 1914. This Act, and subsequent amendments, restricted the importation, manufacture, sale and dispensing of opiates to licensed dealers for medicinal purposes only. In 1930, the Federal Bureau of Narcotics was established to enforce the provisions of this Act.

* A person addicted through the intervention of a physician is termed an iatrogenic addict.

As a result of these restrictions, addicts were deprived of a legitimate source of drugs and a huge illegal Black Market developed, particularly in the large metropolitan areas. The price of drugs became inflated and addicts resorted to crime to obtain money for the drugs.

In January, 1929, the 70th Congress approved an act:

> "To establish two United States Narcotic Farms for the confinement and treatment of persons addicted to the use of habit-forming narcotic drugs who have been convicted of offenses against the United States. Any person addicted to the use of habit-forming drugs, whether or not he shall have been convicted of an offense against the United States, may apply for admission."

The first United States Narcotic Farm was opened in Lexington, Kentucky in 1935. The misleading and inappropriate appellation of the hospital as a farm was soon appreciated and the name changed to the United States Public Health Service Hospital. Three years later, the second hospital was inaugurated at Fort Worth, Texas. Both hospitals have operated as psychiatric hospitals with facilities for research. They remain the only federal hospitals of their kind in the country.

Heroin had, by now, entrenched itself as the most popular opiate on the illegal market. In the background, constantly present, equally familiar, but less threatening, loomed marijuana, whose profile will soon be presented.

This was the opiate proscenium as misguided politicians were preparing to drop their explosive cargo on Pearl Harbor.

Following the end of the war, opiate abuse - by now synonomous with heroin abuse - accelerated tremendously; a younger age group became involved, drug-related crimes increased alarmingly, and the problem of opiate addiction took on new perspectives in terms of dimension. The authorities reacted: the Boggs Act of 1951 and the Narcotics Act of 1956 imposed stricter penalties on illegal drug traffickers.

Physicians fought shy of the problem, the laws were considered ambiguous, and those professionals were disinclined to involve themselves in these murky waters where the guidelines were blurred, the patients unreliable, and the courts apparently overly zealous in rulings against physicians.*

The therapeutic stream - never active - had by now become almost stagnant. The penal approach to the addict gained momentum. Politicians procrastinated. The public grew restive and protested. The

* In 1919, 1920 and 1926, the United States Supreme Court handed down rulings against three physicians for improper prescription of narcotic drugs.

mass media were provided with ready-made scripts portraying in exaggerated and erroneous manner, the fiendish addict perpetrating crimes of violence, and writhing in agony as he suffered the pangs of unmedicated withdrawal from the heroin. A pervasive emotionalism shrouded the addictive scene, obscuring the inroads being made by other drugs not derived from the opium poppy.

Meanwhile, a small and distinguished body of researchers labored resourcefully to alter misguided perspectives, adequately define the problem, seek solutions and investigate and re-investigate old and new drugs. The value and the meaning of the term addiction was challenged and discarded and replaced with the term dependence, followed by a modifying phrase linking the term with the responsible drug or type of drugs: for example, "drug dependence-morphine type", or "drug dependence-amphetamine type."

This new terminology desirably circumvented the age-old polemic which sought to differentiate addiction from habituation, and the unidirectional spot-light on the opiates was re-beamed to incorporate an ever-increasing number of drugs capable of producing physical and/or psychological dependence - for certainly the component which is common to all the drugs under consideration is dependence.*

During this last decade, the Federal Government and certain states responded to a more enlightened approach which had taken root. Drug dependent people were re-directed from the confines of the prisons to the hospital wards in conformity with new legislation, and concern centered around the psychologically vulnerable personality. Implicit in this new approach is the awareness that preventative measures must be sought for in an attempt to deviate the psychologi-

* The World Health Organization Expert Committee on Addiction-Producing Drugs provided the following definitions (1957):

"Drug addiction is a state of periodic or chronic intoxication produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include: 1) an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; 2) a tendency to increase the dose; 3) a psychic (psychological), and generally, a physical dependence on the effects of the drug; 4) detrimental effect on the individual and on society."

"Drug habituation (habit) is a condition resulting from the repeated consumption of a drug. Its characteristics include: 1) a desire (but not a compulsion) to continue taking the drug for the sense of improved well-being which it engenders; 2) little or no tendency to increase the dose; 3) some degree of psychic dependence on the effect of the drug, but the absence of physical dependence and, hence, of an abstinence syndrome; 4) detrimental effects, if any, primarily, on the individual."

In 1964, however, the W.H.O. Expert Committee on Addiction Producing Drugs recommended substitution of the term "drug dependence" for both of the terms, drug addiction and drug habituation.

cally vulnerable from the lure of drugs, and the recognition that the number of drugs capable of producing dependency will inevitably increase.

The euphoria which the drug dependent person so assiduously searches for has become the object of the most modern therapeutic attack. The premise being that if the euphoria is counteracted, there will be no incentive to take the drug or drugs. Two different classes of drugs are currently in use to effect this purpose.

Methadone (long in use as a satisfactory medication for the detoxification of the patients physically dependent on opiates), when given in adequate dosage, and on an ongoing maintenance basis, achieves blockade of the narcotic effects of heroin, nullifying the euphoria. Pilot studies are currently underway and the reports are enthusiastic.

Consequent upon attempts to find a potent pain reliever which would not cause respiratory depression and physical dependence, nalline was synthesized in 1942. Interest in this drug gathered momentum when it was appreciated that apart from its analgesic properties, the new medication was an effective antidote to opiates and synthetic opiates (demerol).

This epochal discovery is of far greater importance to the medical personnel in operating rooms than it is to physicians whose use of the drug may be confined to an occasional life-saving injection given to a desperate heroin self-overdoser. Many newborn infants whose respirations may be dangerously depressed as a result of morphine or demerol given to a laboring mother immediately prior to delivery, have been resuscitated by a prompt injection of nalline. In a like manner, patients under anesthesia can be revived with this medication.

Other narcotic antagonists have been synthesized since 1942: cyclazocine, levallorphan and nalloxone, to mention a few. The former and the latter hold out high promise.

Thus, while methadone exerts a blocking effect on the opiate-induced euphoria, its properties are essentially the same as other opiates causing respiratory depression and physical dependence. The narcotic antagonists, particularly nalloxone, do not produce respiratory depression or physical dependence and actually act as an antidote to these effects. They are also used, particularly in California, to detect the presence of opiates in the body. Cyclazocine, aided by sophisticated research procedures, has been of assistance in demonstrating that tissue dependence on opiates may last up to eight months following abstinence. This observation outlines the need to keep patients in hospital for a period at least exceeding this length of time.

It is hoped that these treatment innovations will be advantageous - for certainly the traditional psychiatric approaches have not been successful. Yet if one reflects on the overall scene, it is noted that the number of opiate abusers has decreased in the last decade,

and in the years 1934-1937, there were fifteen times as much opium available for illegal use as there is today. The census at the Federal hospitals is decreasing, not increasing; the Federal Bureau of Narcotics confirms the deceleration.

To account for this "improvement", in spite of the apparent ineffectiveness of treatment, it is necessary to examine the alternatives that have become available to the psychologically vulnerable. Hallucinogenic drugs, amphetamines, tranquillizers and other drugs are now the tantalizing competitors of the erstwhile mainstay - the opiates.

Susceptible persons have been swept on the winds of a burgeoning pharmaceutical industry and have identified and associated themselves with primitive tribal rituals under the purported prerogatives of religious freedom. Emphasis is now shifting from the ghettoes of the metropolitan areas to the high school and college campus, and from the shiftless, rejected, floundering image of the heroin victim to cultists who derive comfort and guidance from the metaphorical, mystical utterances of some intellectuals, who are themselves dependent on drugs.

The term psychedelic is still in it's infancy, yet it is widely known. It brings to mind a syndrome of variously described, subjective experiences usually initiated by introducing foreign substances into the human organism.

Prior to the introduction of the term, drugs which were capable of producing perceptual distortions were designated as psychotomimetic (imitative of Psychosis) or hallucinogenic (productive of hallucinations). But dissatisfaction was expressed with such designations. It was claimed that the term psychotomimetic implied pathology, thereby imposing a negative value judgment, and the name hallucinogen focused on only one aspect of the drug's effects, ignoring other important potentialities.

Dr. Humphrey Osmond of the New Jersey Psychiatric Institute, adopting the premise that such drugs are capable of making manifest another dimension of reality, introduced the term psychedelic (mind freeing or manifesting). This term evidently meets with approval, but it is apparent that a positive value judgment is projected and adverse connotations are eliminated.

Furthermore, since the beginning of the last century, physicians have endeavored to produce a "model psychosis", a replica of the true psychotic state, so that they may better comprehend the nature and meaning of mental illness. Eminent physicians of the nineteenth century used hashish (marijuana) in an attempt to produce such a model psychosis but abandoned the project, unimpressed with its value. Baudelaire wrote graphically of his experiences with hashish (much in the style of some contemporary literateurs) but after a profound and lengthy experience with the drug he protested "against any drug which would hamper the exercise of free individual assertion and volition".

Mescaline, a product of a small cactus (Peyote) utilized by the Indians of Mexico for religious rites, was amply popularized by Aldous Huxley in his book, "The Doors of Perception." This hallucinogen readily produces nausea and vomiting and a large dose is necessary to produce the desired effect. Hence, it has fallen into disfavor. Psilocybin, derived from certain mushrooms, has similar drawbacks.

In 1944, Dr. A. Hoffman, having recovered from a frightening attack of vertigo, visual distortions, and an unaccountable feeling of discomfort, established that the Lysergic Acid Diethylamide with which he had been working, was the responsible agent for the indisposition he had suffered. He had inadvertently imbibed a small quantity of the chemical and had responded adversely.

Sandoz Laboratories in Basel, Switzerland had for years prior to the synthesization of LSD, been interested in the rye fungus from which the parent alkaloid ergotamine is derived, a medication which effectively controls uterine bleeding following child-birth (by constricting the blood vessels) and derivatives of which are effective through an identical mechanism in Migraine.

LSD is a derivative of the parent substance of the rye fungus and undoubtedly Dr. Hoffman's interest revolved around its potential effects on the blood vessels. After confirming the reality of the distorting properties of LSD, following a purposefully self-administered dose of the drug, he placed it in the hands of a psychiatrist for further experimentation. Reports soon followed, and in 1950, Drs. Busch and Johnson used LSD in the treatment of eight psychiatric patients. Thereafter, scientific publications appeared in profusion. Exuberant claims were made for the value and potential value of LSD as an aid in the psychological exploration of the unconscious mind. The content of that great "store-house" of buried experiences in the unconscious was portrayed as an expediter of the psychoanalytic process, probing loose archetypal impressions (which, but for the intervention of LSD, would lie forever dormant), the drug was catapulted into prominence.

Psychiatrists noted the similarities between the drug-induced distortions of perception and schizophrenia, and scientists were impressed with the minute dose necessary to produce the cerebral and retinal aberrations and compared this with the economy of "dosage" pertaining in the body cells. They observed too, that the phenothiazine tranquillizing drugs, effective in the control of schizophrenia, also terminated LSD induced psychosis.

Proceeding from observation and theory, it was postulated that, since the normal ego functions are the barriers preventing deep psychological impressions from emerging into awareness, LSD must, in some way, dislocate these normal ego functions - open the ego dykes, so to speak, and allow a flood of impressions to seep out of the reservoir.

Ego functions are considered as falling within the three realms of thought, perception, and motility. Disorganization of the ego by LSD manifests in disturbances of these functions.

Thought disturbances are experienced as difficulties with learning, solving problems, memorizing, associating and with abstract thinking.

Perceptual alterations are profound and characterize the psychedelic experience. The most striking of these changes are visual in nature: objects seem to shatter into particles and then reconstitute themselves, hallucinations are frequent and objects assume intensely vivid colors - at times it is difficult to distinguish between real and hallucinated objects, stationary objects appear to close in. There is a generalized feeling of unreality and distortions of bodily sensations - the limbs appear disfigured or absent, creepy-crawly sensations of the skin may be experienced. A phenomenon often described is that of synesthesia (synchronous sensory impressions); for example, when the hands are clapped together, a simultaneous flash of color may be seen.

Impulsivity and compulsivity identify the aberrations of motility; the individual may succumb to the overwhelming need to execute the bizarre act.

The thought disturbances, perceptual anomalies and the impulsivity and compulsivity strongly resemble schizophrenia. Thus, it appeared as *if the "model psychosis" had been achieved, albeit by the grace of* Dr. Hoffman's accident.

But then the "rub". It was noted that the drug had to be administered in ever-increasing amounts to produce the same effects - in short, the subjects readily developed tolerance to the drug. This was so unlike normal cellular responses which are effected by practically unvarying amounts of an endogenous specific chemical (hormone or enzyme). Further, the hallucinations which resulted after taking LSD were almost constantly visual and the schizophrenic patient usually suffers from auditory hallucinations. And an overall dimunition of awareness, described as clouding of consciousness, is frequently observed following the use of LSD, but not with schizophrenia. Other discrepancies were also noted and disappointment mounted. The "model psychosis", in truth, resembled other forms of intoxication with which physicians were eminently familiar - the so-called toxic psychosis. The resemblance of the psychedelic state to delirium is impressive and is made more so with the added knowledge that LSD ingestion elevates body temperature. Death resulting from LSD overdosage is most commonly due to the excessive elevation of temperature.

But more than disappointment was to follow. In Britain, LSD became front-page news as the result of the use among teenagers of morning-glory seeds, which contain LSD. From Germany, Scandinavia, U.S.A. and England came reports of suicides and attempted suicides causally related to LSD usage. Such self-destructive acts and propensities were not necessarily related to depression, although this affect does occur, but rather to an extreme compulsivity to perform the bizarre act. A physician who had taken LSD narrowly escaped drowning after succumbint to a strong compulsion to jump into a lake. A report of 129 patients treated with LSD listed one suicide occurring a few hours after treatment, another six months later, and four others who attempted suicide during the course of treatment. It would be necessary to extend skepticism

beyond useful limits to doubt the cause and effect relationship implicit in that report.

The drug accounted for 150 patient admissions to Bellevue Hospital for the 18-month period ending July 1966. Three adverse patterns of response were noted at this city hospital:

a) panic reactions immediately following the use of LSD
b) recurrence of perceptual disorders occurring up to a year following the last use of the hallucinogen
c) exterded psychosis, resistant to phenothiazine medications.

Significantly, of the 75 persons treated at Bellevue Hospital in 1965, 26 had taken the drug only once.

And LSD can cause dimunition and loss of the appreciation of painful stimuli. A young man who had taken the hallucinogen so mutilated his cheek that, upon arrival at Bellevue Hospital, he was noted to have a large, gaping hole in his cheek which necessitated many plastic operations. He had experienced no pain while he plucked the skin, the muscle, and the mucuous membrane of his face, creating an hiatus into his mouth.

The liver and the kidney are not immune to the deleterious effects of this derivative of the rye fungus. Much more of the drug accumulates in the latter organ than in the brain, causing some impairment of enzyme production, and tests show that the filtration functions of the kidney are deranged.

Buffalo geneticist, Dr. Maimon Cohen, reported on in-vitro tests which demonstrated that LSD caused breaks and rearrangements of chromosomes. He stated, "...these drugs aren't as innocuous as people believe. We've shown now that with LSD there may be covert biological damage beneath the psychosis that we see on the surface."

These chromosomal transpositions and injuries translated in terms of the progeny of the "acid head" makes for a grim prospect if in-vivo determinations confirm the in-vitro findings. Correlating these genetic findings with the thalidomide disaster is obviously premature, but it will hurt none to be chary. It is possible, though, that the next generation may complete the "itinerary" of the "acid trip".

But what about the other side of the coin - other ports of call where the outlook is perhaps not so bleak?

Successes are claimed in the treatment of alcoholics with LSD and sincere declarations are made by psychoanalysts that the drug does assist in uncovering repressed experiences. Such claims may be valid, but in assessing any treatment method, the following considerations must be carefully weighed:

a) the indications for the treatment method
b) the advantages or disadvantages of the proposed new method over existing alternative methods of treatment
c) the complications of the therapy and the risks involved
d) the methodology of the research

When such desiderata are adequately and objectively considered and the appraisal made by suitably qualified persons, then the therapeutic status of LSD will be placed in better perspective.

It is well to bear in mind, in assessing data, that LSD is as effective as hypnotic induction in increasing suggestibility. It is easy, therefore, to influence the outcome of an experiment. And medical practice is beset with islets of therapeutic impotence which creates a tendency to latch onto any new medication and utilize it for illnesses which have resisted other forms of treatment. Alcoholism certainly is an example of an illness which has proven refractory to treatment and the use of LSD is not unexpected. But the treatment should be viewed with an attitude of watchful expectancy until such time as the results can be effectively assessed.

The claims by some psychoanalysts that the drug is a useful facilitator in therapy remains unproven, irrespective of the substantial risks which the use of LSD involves.

As matters stand today in the U.S.A., use of the drug is illegal except for experimental purposes, and this appears to be an appropriate position for the authorities to have taken, in spite of the protestations of those who insist that psychedelic drugs expedite the evocation of talent and that their prescription imposes an impediment to artistic creativity.

Such protagonists readily discard advises that the drug may induce a prolonged psychosis and affirm that Van Gogh was under no artistic disadvantage from his psychotic affliction. The Dutch artist's genius may have found expression because of, or in spite of, the temporal lobe epilepsy from which he suffered, and indeed, a little madness may tinge every genius. It is well to recall, however - as the mother of an autistic schizophrenic child pointed out - that madness without genius is pathetic. And no evidence exists which indicates greater artistic accomplishments in the psychotic than in the rational state.

Undoubtedly, LSD has established an heritage not only of deranged, panic-stricken souls, but of prominent individuals who wittingly or unwittingly have become the spokesmen and leaders of an abundance of drug abusers whose dependencies were thereby given articulate expression and pseudo-scientific purpose. Fortified by such leaders, they became emboldened and began clamoring for the legalization of another more familiar, more widely used hallucinogen, marijuana. Vociferously they echo the chant that "pot" does not produce addiction, that it is harmless and that its proscription is an "enormous imposition" perpetrated by the United States Treasury Department.

In the Spring of 1966, at C. W. Post College, a well-kempt articulate youth addressed himself to the members of a panel assembled by the Nassau County's Task Force on Drug Addiction. He introduced himself as a senior at a neighboring high school and protested that the student who smokes marijuana does not identify himself with the heroin addict, and that the pathetic, frequently tragic portrayals of the opiate victim leaves little impression on him and his colleagues who do not feel

threatened by the depicted progression from marijuana to opiate abuse.

At a previous session on the same day, a psychiatrist rose from the audience and declared that if marijuana does not produce physical dependence, the interdict against its use should be revoked.

Thus in terms of their logic, if an individual does not tear, shake, and ache when deprived of his "reefer" or is not in danger of being lured to the more infamous "bigger league" of the opium abuser, there is no need to prohibit use of the drug.

The cannabis, or hemp plant, known as marijuana, bhang, charas, ghanja, hashish, kif, dagga and insengu, depending on the country in which it is grown, has attracted attention because it produces not only excellent fiber for the manufacture of cord and derivative commodities, but, more importantly, a resin which contains the narcotic ingredient.

Hemp has reference to the hanging rope, an allusion which did not escape Shakespeare:

"Let not hempe his windpipe suffocate."

The designation of the active ingredient as narcotic is wholly justifiable. It is narcotic because it conforms admirably with the definition of a narcotic drug:

> "Any drug which produces sleep or stupor and at the same time relieves pain."*1

It is narcotic because the Chinese have, for centuries, used the plant to produce narcosis. Veterinary surgeons have used cannabis because of the narcotic properties which the drug has.

> "Cannabis has been employed for many years as a sedative and narcotic for the horse, given by mouth. For surgical narcosis, the fluid extract or tincture is occasionally administered intravenously. The use of the drug in the horse has declined in recent years because preparations vary in potency and the dosage is difficult to determine (see Wright, Veterinary Anesthesia, Alex-Eger, 1942)."*2

The depression of the higher critical faculties which the drug produces is euphemistically termed "the high" by the smoker. But by no masterpiece of perverse ingenuity can it be denied that "the high" refers to a state of intoxication with all the concomitants of such inebriation - diminution of awareness, impairment of judgment, particularly loss of ability to estimate time-distance relationships, muscular incoordination and lethargy, decreased sensitivity to touch and pain, difficulty focusing and sustaining mental concentration, and, not infrequently, hallucinations.

*1 - Dorland's Illustrated Medical Dictionary
*2 J.B. Lippincott Co., page 1732, 1947.

The contended cerebral clarity and the expanded reality, claimed as accompaniments of cannabis usage, and disseminated as psychedelic experiences are expressions of befuddlement and distortion.

Consider an individual whose coordination and judgment are impaired, awareness dulled and concentration limited, operating an automobile on an American highway, and view the prospect in the light of what is so gravely apparent with alcohol.

It is frequently contended that alcoholism is a far more serious problem than cannabism and yet alcohol is freely available. So be it at present, but does it then follow that it is necessary to legally nurture the growth of an additional social menace in the form of an extended marijuana problem to compete with and compound the existing ethanol one? Indeed, uncontrolled marijuana usage can reasonably be expected to produce additional complications not as yet typically associated with excessive alcohol consumption. The alcoholic is, in the main, older than the cannabist; the formative educational years lie behind him, and the distillate which he consumes is accurately standardized. Cannabis varies tremendously in potency and the climatic conditions of the countries in which it is grown influences the narcotic content of the plant. More of the active principle is obtained from plants cultivated in warm, moist climates.

And of what avail is it to stress that cannabis does not produce addiction in the sense in which the term is applied to opiates, such as heroin? The marijuana smoker will, in time, become dependent on the drug, and will only differ from the opiate dependent individual by the absence of the characteristic, usually predictable, withdrawal illness when the drug is no longer available. In defining drug dependence, the W.H.O. Committee specifically mentions drugs of the cannabis type. It is illogical to focus attention on the abstinence syndrome and ignore the harm done when the drug is being taken. Individuals psychologically dependent on amphetamine drugs (benzedrine, dexedrine, etc.), for example, do not become physically dependent on the stimulants, yet it is well-nigh impossible to refute the published reports of Japanese scientists who have demonstrated unequivocally that long term use of amphetamine results in irreparable organic brain damage - a dimunition in the number of functioning neurons in the brain. Such damage was readily discernible at post-mortem examination. These scientists reported on some 200,000 cases - the statistical significance of this number hardly needs emphasis.

Drug dependence is a particularly intractable condition. This is true of alcohol, opiates, cannabis, barbiturates, amphetamines, certain tranquillizers and some non-barbiturate hypnotics.

A twenty-one year old male treated at Pilgrim State Hospital, related how he evaded prosecution by claiming to be a heroin addict and thereby becoming eligible for hospitalization in terms of the New York State Law. He explained how he had "beaten" the heroin problem three years prior to his admission to hospital by substituting marijuana for heroin. This young man smoked marijuana excessively to maintain the euphoria. He frequently became nauseous but he claimed never "sick

like when you're kicking heroin". He did not work and was content to "hang around the house". None-the-less, he was proud that he was no longer a "junkie". In reality, however, he was as effectively invalided as when he mainlined heroin - improvident, indolent, apathetic and rationalistic.

This patient's marked psychological dependence on marijuana focuses on an important manifestation of the drug's effects, namely the impairment of time-distance relationships (minutes may seem like hours and short distances inordinately long). A person so affected smokes more and more of the "weed" because he mistakenly belives that the intervals between each cigarette smoked are much longer than they are and the excessive indulgence perpetuates and intensifies his psychological dependence on the drug. Further, this judgmental deficit facilitates additional hazards which assume increased significance in this age of poly-dependence on drugs. Stated differently: the effects of hypnotic and narcotic drugs are additive and persons prone to take more than one type of drug on which they have become dependent, are more vulnerable to overdosage when they under-estimate the time interval between doses. This mutually potentiating effect of drugs has become tragically apparent with alcohol and barbiturates.

Argument is prevalent regarding marijuana smoking and subsequent progression to opiate usage and dependence. No clear-cut relationship has been proven to exist, but not one of over 500 heroin dependent patients admitted to Pilgrim State Hospital with whom this author had experience denied previous usage or its efficacy in producing a satisfactory euphoria, provided sufficient of the "reefer" was available to ensure perpetuation of the euphoria. Such drawbacks as existed with marijuana were related to difficulties in obtaining sufficient amounts of the drug without drawing the attention of law enforcement officers.

Those who champion unrestricted use of marijuana, cite well-known publications as evidence in favor of the harmlessness of the drug. "The Marijuana Problem in the City of New York"*1 is an example of such a publication. Certainly this monograph did palliate the then prevalent fear that large numbers of school children were smoking marijuana, confirmed the absence of a withdrawal syndrome following abstinence, and failed to link cannabism with increased crime perpetration and with permanent organic damage to body tissues. But the authors did report on the occurrence of psychotic episodes, fatuous behavior ("one forgot they were actually adults"), intellectual impairment and impairment of motor coordination.

Recently Ginsberg expressed surprise that no claim has been made for the "usefulness of marijuana." He asserts that it is a "useful catalyst for specific optical and aural aesthetic perceptions", and offers personal subjective experiences in support of his contention. In the introductory remarks of an essay published in a national magazine*2, he advises that he is the recipient of a Guggenheim award for creative writing. There is no cause to doubt the considerable talent which justifies such an honor, but this does not qualify him for the leading role he assumes in proselytizing a drug that can imperil the welfare of naive disciples who, in all probability, are not overly concerned with the aesthetic deficits

*1 The report of the Committee appointed by Mayor LaGuardia - 1944
*2 Atlantic Monthly, November 1966.

he suffers when not intoxicated with marijuana. He describes a state of contemplative tranquility while smoking "legal ghanja" in India and wistfully yearns for a similar situation in the U.S.A.

In an informative essay, Dr. Carstairs described his experiences with the Brahmins with whom he lived in "intimate daily contact" in the state of Rajastan, India:

> "The Brahmins unequivocally denounce the use of daru (a potent distilled alcohol). And yet, again and again, the writer was able to see Brahmin and holy Seddhus conspicuously fuddled with bhang. To his eye, they were drunk as Lords; this form of intoxication they believed to be not only no disgrace, but actually an enhancement of the spiritual life."

Expansive descriptions of subjective experiences are just not valid enough as evidence in support of unrestricted use of marijuana, and they may represent no more than the misleading expression of "impaired intellectual and moral judgment". The objective findings are antithetical clouding of consciousness, not a mystical expansion; dimunition of perceptive acuity, not enhancement; lethargy, not vigor; and apathy, not interest.

More than fifty years have elapsed since it became compellingly apparent that it was necessary to exert controls on drugs which influence central nervous activity. The Harrison Act of 1914 sought to confine narcotic drugs to professional usage. The Marijuana Tax Act of 1937 placed marijuana in the same category as other narcotic drugs, limited its use to experimental purposes and prohibited unauthorized procurement.

Drug dependence requires for its control such procedures as have proven effective in combating other public health diseases, namely law enforcement, public education and treatment of the individual. Implementation of such measures require support, not spurious argument directed at their abolition. Undoubtedly, a direct relationship exists between drug availability and dependency. The enormity of the liquor problem bears adequate testimony to this relationship. For this reason alone, the free distribution and use of marijuana should be rigorously combated and officially prohibited.

Educational programs, such as have been recently introduced by the Suffolk County Community Mental Health Board, which advise of the dangers inherent in drug abuse, should be expanded. The intention is not to induce alarm or propagate dramatic, exaggerated versions of this menace, but to create a climate of communal responsibility and preparedness; to identify and protect the psychologically vulnerable who may, ill-advisedly, seek refuge in drugs, and to endeavor to obviate and negate predisposing circumstances which lead to drug abuse. Such measures which are directed at prevention are essential because the individual treatment of the drug dependent person is encumbered with exasperating difficulties.

Physical activities, such as sports, are eminently satisfactory tension-reducing measures and should be encouraged. Lack of organization, lack of encouragement and lack of suitable facilities have, in large measure, deprived the child and adolescent of this essential outlet for stress, particularly in crowded urban areas. Significantly, the increase in drug abuse coincided with the termination of the gang wars in New York City. The acting-out was a stress-diminishing activity - drugs proved to be a more effective remedy and was readily resorted to.

Adverse peer influences continue to be a major factor in perpetuating and disseminating the contagion of drug abuse. The idle, tense youth is highly vulnerable to such influences. The drug dependent patient succinctly describes his dilemma when he says, "the day is very long and when you're up tight, you must do something. When you're out there on the streets you go along with the crowd."

Contained within this explanation is a plea for assistance and a directive as to kind of help which is needed - socio-economic and psychological. Overcrowding in urban areas and lack of recreational facilities is a favorable spawning ground for drug abuse.

The problem of drug dependence is formidable but not invincible - it awaits adequate, bold, comprehensive challenge.